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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/746,675	12/22/2000	Lawrence T. Clark	42390P9854	1642

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EXAMINER

DEMAKIS, JAMES A

ART UNIT

PAPER NUMBER

2836

DATE MAILED: 03/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/746,675

Applicant(s)

CLARK ET AL.

Examiner

James A Demakis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-11, 15 and 18-21 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 12-14, 16, 17 and 22 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to because : Figure 1, misdrawn transistor symbols for 30, 31, and 50, missing connection symbol at Vccp for transistor 30, misdrawn diode 43 symbol, MOS transistors 34, 36, 37 should be NMOS not PMOS; Figure 3, diode 360 symbol misdrawn, transistors 311 and 313 should be NMOS; Figure 4, voltage divider transistors 410 are not all labeled, Capacitors are not all identified, inverters 460, 461, 463, 464 require one transistor to change to an NMOS, transistor 420 should be NMOS and not identified by number, 463 transistor combination 420/421 is also identified as 430 by the specification, diode across core logic is misdrawn and not identified as 43 as per the specification . A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Figure 4, 430 and 420 not shown. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance

Specification

2. The disclosure is objected to because of the following informalities: Sheet 2, line 18, add "circuit" after integrated; Sheet 4, lines 6,7, "Coupled" may NOT mean that elements are in direct physical or electrical contact, line 20, delete "are"; sheet 7, lines 3,4, delete " integrated in" and "integrated circuit if"; Sheet 8, lines 18,19, Change "50" to 20; Sheet 9, lines 7-13,

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“Fig.2”, the discussion does not seem appropriate for this Figure, line 7, delete “for”, line 11, change “in” to is, line 20, change “21” to 31; Sheet 10, lines 20, 21, delete “may be reduced”; Figures have reference numbers for components not detailed in the Specification, such as, diode 43 (also, called 360, pick one- your choice) capacitor 41, 320, and resistor 317.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 6-11, 15, 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maloney et al (USPN 5,907,464) and in view of Ye et al (USPN 6,329,874).

Regarding Claims 1-3, 6-11, 15, 18-21:

Maloney et al discloses ESD protection MOS circuits using substrate biasing to effect leakage currents. Figure 8 shows the use of series transistors, PFETs 828 and 830 as a switchable conductive circuit, either or both may be switched. Additionally, Figure 10 shows the use of a resistive connected PFET 1024 and NFET 1026 which controls the substrate/n-well biasing of the PMOS 1010 clamp. Maloney et al does not discuss the reverse biasing in the off mode.

Ye et al discloses the use of body bias to reduce leakage currents. From an active mode to a standby mode, a control circuit changes the substrate bias voltage to cause a reverse bias in the transistor body, by increasing threshold voltages of a PMOS transistor during the standby mode to reduce or cutoff leakage current, see Col.1, lines 56-66.

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It would have been obvious to one having ordinary skill in the art at the time of the invention to have modified Maloney et al by Ye et al to increase the voltage on the substrate bias thereby decreasing the leakage currents when the transistor is off because reducing leakage reduces power consumption.

Allowable Subject Matter

5. Claims 4,5,12-14,16,17,22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A Demakis whose telephone number is 703.305.7938. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 703.308.3119. The fax phone numbers for the organization where this application or proceeding is assigned are 703.308.7721 for regular communications and 703.308.7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0956.

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James A. Demakis

March 7, 2003

A handwritten signature in black ink, appearing to read 'Brian Sircus', written in a cursive style.

BRIAN SIRCUS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800